

Player Attitudes Toward Mental Disorder Depictions in Video Games: Implications for Cognition and Recovery

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Abstract: Mental disorders and the stigma of mental disorders affect the lives of a segment of the population as well as mental health care, and these issues are related to the well-being of people's lives, social development, and the economy. Video games, as a popular and persuasive medium of expression, are considered to have the potential to be a cost-effective way to reduce shame and heal patients. This paper analyses the attitudes of players towards the depiction of mental disorders in two games, Needy Streamer Overload and The Longest Walk. The study confirmed the role of games in the cognition and recovery of mental disorders found in some previous studies, and found some new potential roles. Based on the analysis results, this paper puts forward the design direction and points for attention when designing this kind of games in the future.

Keywords: mental disorders; video games; cognition; recovery; impact.

1 Introduction

The United Nations put forward 17 sustainable development goals (SDG) in the 2030 Agenda for Sustainable Development, with Goal 3 proposing to ensure healthy lives and promote well-being for all at all ages[1]. Mental health is defined as a component of health by the WHO. 1 in every 8 people worldwide live with a mental disorder, Mental disorders bring difficulties to all aspects of patients' lives, yet few could afford quality mental health care. Discrimination, stigma and human rights violations also affect people with mental illness and care systems worldwide[2]. Mental health problems have a significant economic impact[2], The appearance of the COVID-19 pandemic has exacerbated this phenomenon[3]. WHO Director-General Dr Tedros Adhanom Ghebreyesus said[4], “..... transforming policy and practice in mental health can deliver real, substantive benefits for individuals, communities and countries everywhere.....Investment into mental health is an investment into a better life and future for all.” Mental health issues are closely linked to individual well-being, social development, and economic benefits[3][4], but the need for mental health care is largely overlooked in public health[5]. There is an urgent need to improving mental health care and address mental health issues[6][7].

In the age of new media, people increasingly rely on digital and social media for information[8]. However, most media portrayals of mental disorders tend to be negative and stereotypical, many of them linking violent behavior with mental illness[9]. This perpetuates long-standing misunderstandings and stereotypes about mental disorders and undermines

people's empathy for people with mental disorders[10][11]. Such societal conditions hinder the recovery of individuals with mental disorders and lead to self-stigma[11]. The stigma and stereotypes associated with mental disorders are the significant barrier in mental health care and need to be overcome[7][12].

Video games have become one of the most popular forms of media and a part of many people's daily lives[13]. According to recent estimates, there were approximately 3.305 billion video game players worldwide in 2023, with this figure expected to rise to 3.675 billion by 2026[14]. Video games are not just a form of entertainment, they have the power to change people's fundamental attitudes and beliefs about the world[15]. A study found that many video games on the market often describe mental disorders, mental hospital and nursing in a one-sided and negative way, which continues the public's stereotype and prejudice against mental disorders[16]. It is worth noting that in the selection of the best game of year in IGN 2018, a planar pixel 2D game got the only 10/10 score[17]. Celeste is a game about the protagonist's struggle with mental disorders (especially anxiety and depression). Some players have said that Celeste helped them solve their personal problems, and even with Celeste's encouragement, one suicidal player chose to move on[18]. Relevant studies have shown that Celeste can help alleviate the symptoms of depression and anxiety and help players cope with psychological problems, while helping to de-stigmatize mental disorders[19][20]. At present, more and more developers choose games as a medium to share their own experiences or those of people close to them who suffer from mental disorders and how they feel about it[21].

Many studies have demonstrated that real, positive messages about mental disorders in games help to destigmatize mental disorders and help improve mental health. However, less research has been done on how games specifically affect players. This paper analyses 400 player reviews of two games about mental disorders, Needy Streamer Overload and The Longest Walk. It examines players' attitudes towards the portrayal of mental disorders in these games and how the games affect players' emotions, cognition and behavior. The study aims to provide game developers with insights into the design of content related to mental disorders.

2 Literature Review

2.1 Existence and impact of mental health stigma

Mental health stigma is an important area of concern in public health. The negative effects of mental health stigma are considered to be as harmful as those of mental disorders[22]. Living in a stigma-ridden environment can internalize stigma in people with mental disorders, leading them to engage in self-depreciation and self-prejudice, which interferes with the reality of the mentally ill person's activities and wellbeing[10][12]. The WHO special initiative for mental health (2019-2023) [23] makes specific reference to the necessity of raising media and societal awareness of the importance of mental health in order to advance strategic measures for mental health policy, advocacy and human rights.

2.2 The potential benefits of video games for mental health

The game improves the player's mood and reduces stress[24]. Emotions are an important part of mental health, gaming can elicit positive emotions such as empathy and gratitude, which

can motivate players to adopt more positive behaviors in their lives with the aim of self-improvement[19][25]. A study examines the video games in veterans' coping with stress and mental health issues[26], the results indicated that video games may be an effective intervention for reducing the symptoms of post-traumatic stress disorder (PTSD) and depression in veterans, games can also distract them from thoughts of suicide, alcoholism and drug addiction.

3 Method

3.1 Game selection

In order to identify suitable games for this study, several sources were consulted. These included CheckPoint Organization (combines mental disorder research with video game technology); In Our World (Charity aiming to create and foster global mental health awareness within the video game industry); and the INDIENOVA game list focused on mental health topics. From these sources, ten games related to mental disorders released in the last five years were selected, namely: The Longest Walk, Milk inside a bag of milk inside a bag of milk, The Suicide of Rachel Foster, Needy Streamer Overload, I Did Not Buy This Ticket, Birth, Martha is Dead, Little Misfortune, Doki Doki Literature Club Plus, Omori.

A total of ten university game design professors and veteran players with over 15 years of experience were invited to rank the games. They selected the two most representative games from the list of ten. The two games with the highest number of recommendations were Needy Streamer Overload and The Longest Walk in **Table 1**, which were chosen for this study to analyze the player reviews of these two games.

Table 1. Basic information on Needy Streamer Overload and The Longest Walk.

Game Title	Release date	Distributor
Needy Streamer Overload	June 5, 2021	WSS playground
The Longest Walk	September 10, 2022	Abertay Game Lab

Needy Streamer Overload, a visual novel type game. In the game, the player will play the role of the agent of a female Internet anchor with mental disorder, and help her gain 1 million fans on the Internet.

The Longest Walk, a walking simulator-type game in which the developer edited a 54-minute interview with his father into a nine-and-a-half-minute gameplay experience describing his father's experience living with depression and suicidal thoughts.

3.2 Player Reviews Analysis

Steam is one of the largest gaming platforms. Players can share their opinions on games, and users can read and comment on reviews from around the world.

This study used the Selenium library to scrape review data for the games Needy Streamer Overload and The Longest Walk from the Steam platform, including review text, review date, user information, and review outcomes. After data collection, the data was cleaned. The data cleaning steps included removing duplicate reviews, handling missing values, and normalizing

the text, such as removing special characters, stop words, and performing lemmatization. Additionally, the reviews were filtered to select those containing content related to mental disorders or mental health. After text processing, the TF-IDF algorithm was used to extract keywords from the reviews. Based on this, and combining David Myers' attitude model, keyword categories were established from three aspects: player emotions, player cognition, and player behavioral tendencies. The extracted keywords were then manually classified. Through this systematic approach, it was possible to deeply analyze player attitudes towards the mental disorder content in the two games, thus providing reliable data support and an analytical foundation for the study.

4 Result

Table 2 and **Table 3** present the results of player attitude analyses for reviews of the games *Needy Streamer Overload* and *The Longest Walk*. Some players expressed multiple attitudes in a single review, and these comments are counted repeatedly.

Table 2. *Needy Streamer Overload*.

player attitude	main points
player emotion	empathy, sympathy, linked with the protagonist
	hope the protagonist/everyone is happy
player cognition	mental disorder is described in a very real /realistic way
	may cause relapses of mental disorders, descriptions too real for comfort, Description is too true to cause discomfort.
player behavioral intention	continue to live, return to school, stop self-harm

Table 3. *The Longest Walk*

player attitude	main points
player emotion	relatable, empathy, sympathy
	touched, warmth
player cognition	real/ sincere/ meaningful game
	Raising awareness of mental disorders, motivating patients
player behavioral intention	Learn useful ways to help myself, control negative behaviors

4.1 Emotional influence

These players talked about the ability of these two games to transfer them to specific emotional states, among which the most obvious is the player's empathy and sympathy for the content about mental disorders in the game. This kind of emotional experience has a great influence on the emotional identity of players, establishes emotional connection between players and the game character, and enhancing the player's sense of belonging. Sense of belonging is important for mental health[27]. Low self-esteem of patients with mental disorders can lead to self-isolation and social isolation[28]. A sense of belonging can bring emotional support and comfort to players, thus reducing their loneliness.

In the reviews of Needy Streamer Overload, the research noticed that some players expressed their wishes to the protagonist and other players. This also confirms the previous researches that the game plays a role in players' emotional adjustment[19][24]. In addition, the game can not only help them gain a positive game experience from the game, but also extend to the real world of players outside the game.

4.2 Cognition influence

Players consider that both games are realistic in their representation of mental disorder content. The depictions of mental disorders in both Streamer Overload and The Longest Walk are based on the producers' real-life experiences. This avoids the stereotyped and stigmatized description of mental illness out of thin air, and allows players to understand the life problems faced by mental patients.

It should be noted that the description of mental disorder in Needy Streamer Overload is controversial, some players have expressed concern that the game may have a negative impact on the treatment of mental illness in patients. This controversy stems from the fact that the content depicted in the game is perceived to be too realistic. In contrast, the appropriate performance of The Longest Walk in the description of mental disorders is considered to be more conducive to helping people understand mental disorders and providing incentives to players with similar experiences.

4.3 Behavior influence

Players also expressed the impact of the game on their real lives.

“.....I personally had made many of the decision he had made when he was depressed and I learned many helpful ways to help me as well.....” (C***n, January 16, 2023, The Longest Walk)

“I took a break from school and came across this game at home.....After playing this game, I thought about it. I put away all the compasses at home so that I wouldn't hurt myself anymore. I took the initiative to go back to school. I will live well in real life.” (p***d, January 16, 2023, The Longest Walk)

This indicates that games about mental disorders serve not only as a means of escapism from reality or an emotionally rewarding outlet for players with mental disorders, but also as a potential source of solutions to the problems faced by those with mental disorders, or even as a source of hope for players in despair.

5 Conclusions and limitations

Based on attitudinal analyses of player reviews, this study identified the impact of two games, Needy Streamer Overload and The Longest Walk on players' perceptions and improvement of mental disorders. The results of these analyses are presented in the following five key points, which are intended to provide design ideas, directions and considerations for future relevant games when designing content depicting mental disorders.

(1) The narrative of the game is based on the personal or real life experiences of the game

creators, providing first-hand information about the content related to mental disorders. This method can promote a more realistic understanding of mental disorders, enhance awareness of the difficulties confronted by individuals with mental disorders and how to live with them, thus reducing the stigma of mental disorders;

(2) Relevant game developers need to establish a player testing and experience mechanism, collect players' feedback on the content of mental disorders in the game in time, and continuously optimize and improve the design of related content;

(3) The depiction of mental disorder can provide players with tangible and practical solutions to psychological issues. This can assist players who are grappling with mental health challenges in their personal lives;

(4) Game makers need to be aware of the extent to which mental disorders are depicted in their games. They should avoid exaggerating or over-describing mental disorders in their games to avoid triggering an over-embodied or uncomfortable experience for players with similar experiences.

(5) It is found that players are willing to express their views and personal experiences on mental disorders on the platform after the game, relevant game designers can consider adding social functions to the game to provide players with a platform for understanding mental disorders and help each other.

However, it should be noted that this research is subject to several limitations. The study focuses on how the game affects the recovery of cognitive and mental disorders from the player's perspective. In terms of methods, there are some restrictions on the number and types of games analyzed in this paper. At the same time, the attitude of players to mental disorders in comments only represents one aspect of the influence of games on players' cognition and recovery. Future research must therefore analyze this from a wider range of perspectives and in greater detail if game producers are to be provided with a strong creative basis for designing mental disorder content in games.

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